

ABSTRACT OF THE INVENTION

The present invention relates to compositions and methods for the treatment and diagnosis of conditions, disorders, or diseases involving cell death. The invention encompasses protective nucleic acids which, when introduced into a cell predisposed to undergo cell death or in the process of undergoing cell death, prevent, delay, or rescue the cell from death relative to a corresponding cell into which no exogenous nucleic acids have been introduced. The invention encompasses nucleic acids of the protective sequence, host cell expression systems of the protective sequence, and hosts that have been transformed by these expression systems, including transgenic animals. The invention also encompasses novel protective sequence products, including proteins, polypeptides and peptides containing amino acid sequences of the proteins, fusion proteins of proteins, polypeptides and peptides, and antibodies directed against such gene products. The invention further relates to target sequences, including upstream and downstream regulatory sequences or complete gene sequences, antibodies, antisense molecules or sequences, ribozyme molecules, and other inhibitors or modulators directed against such protective sequences, protective sequence products, genes, gene products, and/or their regulatory elements involved in cell death. The present invention also relates to methods and compositions for the diagnosis and treatment of conditions, disorders, or diseases, involving cell death, including, but not limited to, treatment of the types of conditions, disorders, or diseases, which can be prevented, delayed or rescued from cell death and include, but are not limited to, those associated with the central nervous system, including neurological and psychiatric conditions, disorders, or diseases, and those of the peripheral nervous system. Further, the invention relates to methods of using the protective sequence, protective sequence products, and/or their regulatory elements for the identification of compounds that modulate the expression of the protective sequence and/or the activity of the protective sequence product. Such compounds can be useful as therapeutic agents in the treatment of various conditions, disorders, or diseases involving cell death.